



METERS

- PORTABLE MULTIMETER
- BENCHTOP MULTI METER
- WATTMETER
- STUDENT METER
- INFRARED RAY TEMPERATURE METER
- AND MORE...

WD SERIES



Features

- . Mono-phase and tri-phase balance measures
- . Auto range selecting (WD3000)
- . Small power measure
- . Connection and operation simplicity
- . Accuracy: better than 2% at the full current and voltage scale
- . Protection against over-currents by fuses
- . Over current and over voltage indicator

WD2250A

Specifications

- . AC operation
- . Current ranges: 0.1A, 0.5A, 1A, 5A
- . Voltage ranges: 3V, 15V, 30V, 240V, 450V
- . Power measured: 0.3W~2250W (rate capacity)
- . Frequency ranges: 0~3kHz
- . LCD display: 3 1/2 digits
- . Dimensions: 235(W)×75(H)×170(D)mm
- . Weight: 0.6kg



WD2250A

WD2250B

Specifications

- . Battery operation
- . Automatic shutdown of the wattmeter after 2mins with battery saver
- . The running time is about 8 hours in continuous operation
- . Current ranges: 0.1A, 0.5A, 1A, 5A
- . Voltage ranges: 3V, 15V, 30V, 240V, 450V
- . Power measured: 0.3W~2250W (rate capacity)
- . Frequency ranges: 0~3kHz
- . LCD display: 3 1/2 digits
- . Dimensions: 235(W)×75(H)×170(D)mm
- . Weight: 0.6kg



WD2250B

WD3000

Specifications

- . AC operation
- . Current ranges: 0~7A
- . Voltage ranges: 0~450V
- . Power measured: 0.3W~3150W (rate capacity)
- . Frequency ranges: 0~3kHz
- . LCD display: 3 1/2 digits
- . Dimensions: 235(W)×75(H)×170(D)mm
- . Weight: 0.6kg



WD3000

STUDENT METER

Feature

- .Compact size
- .Easy operation and stable work
- .Binding post or safety socket connection
- .Suitable for school experiment

S Series Specifications

Current Meter

Model	Type	Range	Connector
DCA-1S	Ampere meter DC	0-50mA-500mA-5A	Safety Socket
ACA-1S	Ampere meter AC	0-500mA-1A-5A	Safety Socket

Voltage Meter

Model	Type	Range	Connector
DCV-1S	Volt meter DC	0-3V-30V-300V	Safety Socket
DCV-2S	Volt meter DC	0-300mV-3V-30V	Safety Socket
ACV-1S	Volt meter AC	0-15V-150V	Safety Socket

Galvano Meter

Model	Type	Range	Connector
DCG-1S	Galvano meter	$\pm 35 \mu A$	Safety Socket
DCG-2S	Galvano meter	$\pm 30mA$	Safety Socket



DCA-1S



DCV-1S



DCG-1S

Normal Series Specifications

Current Meter

Model	Type	Range	Connector
DCA-1	Ampere meter DC	0-50mA-500mA-5A	Binding Post
ACA-1	Ampere meter AC	0-500mA-1A-5A	Binding Post

Voltage Meter

Model	Type	Range	Connector
DCV-1	Volt meter DC	0-3V-30V-300V	Binding Post
DCV-2	Volt meter DC	0-300mV-3V-30V	Binding Post
ACV-1	Volt meter AC	0-15V-150V	Binding Post

Galvano Meter

Model	Type	Range	Connector
DCG-1	Galvano meter	$\pm 35 \mu A$	Binding Post
DCG-2	Galvano meter	$\pm 30mA$	Binding Post



DCA-1



DCV-1



DCG-1

STUDENT METER

RM & RS SERIES



Features:

- .Portable meter
- .Easy operation and stable work
- .Safety socket connection
- .Suitable for school experiment

Specifications

Current meter:

Model	Type	Range	Accuracy
RM3248	Analog DC current meter	1A/10A	2.5%
RM3250	Analog AC current meter	1A/10A	2.5%
RS3248	Digital DC current meter	0~1999mA	0.5%
RS3250	Digital AC current meter	0~19.99A	1%

Dimensions: 94 × 150 × 35 mm

Weight: 150g

Voltage meter:

Model	Type	Range	Accuracy
RM3249	Analog DC voltage meter	1.5V/15V	2.5%
		3V/30V 25V/250V	
RM3251	Analog AC voltage meter	25V/250V 100V/1000V	2.5%
RS3249	Digital DC voltage meter	0~199.9V	0.5%
RS3251	Digital AC voltage meter	0~1000V	1%

Dimensions: 94 × 150 × 35 mm

Weight: 150g

Galvanometer:

Model	Type	Range	Accuracy
RM3252	Analog galvanometer	±0~500 μA	2.5%
RS3252	Digital galvanometer	±0~1999 μA	0.5%

Dimensions: 94 × 150 × 35 mm

Weight: 150g



RM 3250



RS 3248



RM 3249



RS 3249



RM 3252



RS 3252

POWER SUPPLY

TEST INSTRUMENT

EDU. INSTRUMENT

METER

MACHINE

ACCESSORY

SAM & SVM SERIES STUDENT METER

SAM-001

Features

- .Max 10A current measuring
- .Both AC and DC current measuring
- .Solid structure with metal casing
- .4mm safety socket input



SAM-001

Technical Data	DC	AC
Measuring range	0~1mA	
	0~10mA	0~10mA
	0~100mA	0~100mA
	0~1A	0~1A
	0~10A	0~10A
Accuracy	1.5%	2.5%
Dimensions(W×H×D)	170×130×54mm	
Weight	910g	

SVM-001

Features

- .Max 1000V voltage measuring
- .Both AC and DC voltage measuring
- .Solid structure with metal casing
- .4mm safety socket input



SVM-001

Technical Data	DC	AC
Measuring range	0~0.1V	
	0~1V	0~3V
	0~10V	0~10V
	0~100V	0~100V
	0~1000V	0~1000V
Accuracy	1.5%	2.5%
Dimensions(W×H×D)	170×130×54mm	
Weight	760g	

D SERIES METER & DEMONSTRATION METER

D SERIES



Features:

- .Four ranges
- .2000 counts display
- .Simple and extremely safe to use
- .Safety sockets and dual insulation



DAA-1



DAV-1



DDA-1



DDV-1

Specifications

Model	Type	Range/Resolution	Accuracy	Fuse
DDV-1	DC voltage meter	200mV/0.1mV	$\pm(0.5\%+1\text{digits})(200\text{mV})$ $\pm(0.8\%+1\text{digits})(2\text{V}/20\text{V}/200\text{V})$	NA
		2V/0.001V		
		20V/0.01V		
		200V/0.1V		
DDA-1	DC current meter	2mA/0.001mA	$\pm(1\%+1\text{digits})(2\text{mA}/20\text{mA}/200\text{mA})$ $\pm(1.5\%+2\text{digits})(5\text{A})$	5A(5A) 500mA(2mA/20mA/200mA)
		20mA/0.01mA		
		200mA/0.1mA		
		5A/0.01A		
DAV-1	AC voltage meter	2V/0.001V	$\pm(1\%+2\text{digits})$	NA
		20V/0.01V		
		200V/0.1V		
		600V/1V		
DAA-1	AC current meter	2mA/0.001mA	$\pm(1.2\%+2\text{digits})(2\text{mA}/20\text{mA}/200\text{mA})$ $\pm(1.5\%+3\text{digits})(5\text{A})$	5A(5A) 500mA(2mA/20mA/200mA)
		20mA/0.01mA		
		200mA/0.1mA		
		5A/0.01A		

Dimensions: 190×140×80 mm

Weight: 150g

ADM-101



Features

- .Two zero position (left or middle)
- .Voltage meter, current meter and galvanometer 3 in 1
- .Max. 100V and 10A measuring range
- .Meter pointer protection switch

Measuring range: 0~3/10/30V/100V (AC/DC)
0~50mA/100mA/1A/5A/10A (AC/DC)

Accuracy: 2.5%

Dimensions(W×H×D): 270×330×110mm

Weight: 1.0kg



ADM-101

POWER SUPPLY

TEST INSTRUMENT

EDU. INSTRUMENT

METER

MACHINE

ACCESSORY

DEMONSTRATION METER

MT8145D



NEW

Features

- .4 7/8 digits LCD display with back light, dual display
- .External large LED display for demonstration
- .Multi-function of ACV/DCV, ACA/DCA, R, Hz, Max/Min/Main, REL, Hold, dBm, diode test and continuity beeper test
- .High resolution of 10 μ V, 10 μ A, 10m Ω , 0.01Hz
- .Manual or auto ranging
- .0.03% DCV accuracy
- .1000V high voltage range
- .AC or AC + DC true rms
- .Overload protection
- .RS232 interface



MT8145D

Technical Data		MT8145D		
DC voltage	Range	80mV, 800mV, 8V, 80V, 800V, 1000V		
	Accuracy	$\pm(0.03\%rdg+3digits)$		
	Input impedance	1000M Ω (300mV, 3V) 10M Ω (other ranges)		
AC voltage (AC or AC+DC true rms)	Range	80mV, 800mV, 8V, 80V, 750V		
	Accuracy	80mV~80V range	20~50Hz: $\pm(0.8\%rdg+50digits)$ 50Hz~20kHz: $\pm(0.8\%rdg+50digits)$ 20~50kHz: $\pm(1.5\%rdg+50digits)$ ($<75\%$ range) 50Hz~20kHz: $\pm(5.0\%rdg+50digits)$ ($>75\%$ range)	
		750V range	50Hz~1kHz: $\pm(0.8\%rdg+50digits)$	
		Input impedance	1M Ω series with 0.1 μ F	
		Range	80mA, 800mA, 8A, 20A	
DC current	Accuracy	$\pm(0.2\%rdg+10digits)$ $<800mA$ range $\pm(0.5\%rdg+10digits)$ $>8A$ range		
	Range	80mA, 800mA, 8A, 20A		
AC current	Accuracy	80mA, 800mA range	50Hz~10kHz: $\pm(0.8\%rdg+20digits)$	
		8A, 10A range	50Hz~500Hz: $\pm(1.0\%rdg+20digits)$	
	Range	800 Ω , 8k Ω , 80k Ω , 800k Ω , 8M Ω , 80M Ω		
Resistance	Accuracy	800 Ω ~300k Ω range	$\pm(0.3\%rdg+10digits)$	
		8k Ω ~8M Ω range	$\pm(0.3\%rdg+5digits)$	
		80M Ω range	$\pm(3.5\%rdg+3digits)$	
Capacitance	Range	1nF, 10nF, 100nF, 1 μ F, 10 μ F, 100 μ F		
	Accuracy	$\pm(5\%rdg+50digits)$ 1nF range $\pm(2.5\%rdg+50digits)$ 10nF~100 μ F range		
Frequency hFE (PNP or NPN)	Range	999099Hz~1000.0MHz		
	Accuracy	$\pm(0.05\%rdg+5digits)$		
	Display	$\pm(0.1\%rdg+5digits)$		
Diode test	Test condition	Current is approx. 10 μ A, Vce is approx. 3V		
		Check the forward voltage of diode. Maximum forward voltage 2V, open voltage 2.8V		
Continuity beeper	$<5\Omega$			
NMRR	$>60dB$			
CMRR	$>120dB$			
Power source	110 ~ 127VAC $\pm 10\%$ / 220 ~ 240VAC $\pm 10\%$, 50Hz ± 2 Hz / 60Hz ± 2 Hz			
Dimensions(W×H×D)	260mm×220mm×82mm			
Weight	Approx. 1.5kg			

POWER SUPPLY

TEST INSTRUMENT

EDU. INSTRUMENT

METER

MACHINE

ACCESSORY

MS SERIES METER

MS 300 SERIES



Feature

- .Sturdy, simple and extremely safe to use
- .High accuracy and reliability
- .Combination of electronic and mechanical advantage
- .Single switch for range selection
- .Safety sockets and dual insulation
- .Moulded, water-resistant casing



Technical data	MS-301	MS-302	MS-303
Function	AC/DC Current meter	AC/DC Voltage meter	Galvano Meter
Range	AC 10mA~10A(7Steps) DC 100uA~10A(11Steps)	AC 3V~1000V(6Steps) DC 100mV~1000V(8Steps)	DC 30uA~3mA(2 Steps) DC 100mV(1Step for shunts)
Accuracy	1.5%(DC), 2%(AC)	1.5%(DC), 2%(AC)	1.5%
Operating frequency	45~400Hz	20~400Hz	
Fuse	1A and 10A	Electronic Protection	200mA
Accessories	NA	NA	NA

Dimensions: 170×165×55 mm

Weight: 200g



MS-301



MS-302



MS-303

Technical data	MS-304	MS-305	MS-306
Function	Single phase wattmeter	Single and 3-phase wattmeter	Multi-Meter
Range	AC/DC 60-120-240-480V AC/DC 2.5A/5A	AC/DC 60-120-180-240-360-480V(1 Ph.) AC/DC 60√3-120√3-180√3-240√3V(3 Ph.)	DCV 2.5V~1000V(7 Steps) ACV 10V~1000V(6 Steps) DCA 50uA~10A(9 Steps) ACA 2.5mA~10A(7Steps) Resistance 1Ω~1KΩ(4Steps)
Accuracy	2.5%(DC), 1%(AC)	2.5%(DC), 1%(AC 1 Ph.), 2%(AC 3 Ph.)	1.5%(DC), 2.5%(AC)
Operating frequency	0~500Hz	15~500Hz	20~400Hz
Fuse	1A	5A	10A and 1A
Accessories	NA	NA	Test leads × 2

Dimensions: 170×165×55 mm

Weight: 200g



MS-304



MS-305



MS-306

MS SERIES METER

MS 500 SERIES

Feature

- .Sturdy, simple and extremely safe to use
- .LCR measuring (MS-508 only)
- .High accuracy and reliability
- .Combination of electronic and mechanical advantage
- .Single switch for range selection
- .Safety sockets and dual insulation

Technical data	MS-501	MS-502
Function	AC/DC Current meter	AC/DC Voltage meter
Range	AC: 3mA/10mA/30mA/100mA/300mA/1A/3A/10A DC: 100uA/300uA/1mA/3mA/10mA/30mA/100mA 300mA/1A/3A/10A	DC: 0.1V/1V/3V/10V/30V/100V/300V/1kV AC: 3V/10V/30V/100V/300V/1kV
Accuracy	DC: 2.0%, 3.0% (3A/10A) AC: 3.0%, 4.0% (3A/10A)	DC: 2.0%, AC: 3.0%
Accessories	NA	NA

Dimensions: 160×105×44 mm

Weight: 300g



MS-501



MS-502

Technical data	MS-503	MS-507
Function	Galvano Meter	OHM Meter
Range	DC 100mV DC 30uA/3mA	0~5 Ω / 0~25 Ω / 0~50 Ω
Accuracy	2.0%	3.0% (0~5 Ω), 2.0% (0~25 Ω / 0~50 Ω)
Accessories	NA	NA

Dimensions: 160×105×44 mm

Weight: 300g



MS-503



MS-507

POWER SUPPLY

TEST INSTRUMENT

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METER

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ACCESSORY

D SERIES METER & DEMONSTRATION METER

Technical data	MS-506-A			
Function	Multimeter			
Measuring range	0~1/3/10/30V (DC)	0~1/3/10A (DC)	0~1/3/10/30V (AC)	0~1/3/10A (AC)
	0~100mV (DC)	0~10/30/300mA (DC)	0~100mV (AC)	0~10/30/300mA (AC)
	0~1mV (DC)	0~100uA (DC)	0~1mV (AC)	0~100uA (AC)
Accuracy	2.0%	3.0%	3.0%	4.0%
Accessories	NA			

Technical data	MS-506-B			
Function	Multimeter			
Measuring range	0~1/3/10/30V (DC)	0~1/3/10A (DC)	0~1/3/10/30V (AC)	0~1/3/10A (AC)
	0~100mV (DC)	0~10/30/300mA (DC)	0~100mV (AC)	0~10/30/300mA (AC)
Accuracy	2.0%	3.0%	3.0%	4.0%
Accessories	NA			

Dimensions: 160×105×44 mm

Weight: 350g



MS-506A



MS-506B

Technical data	MS-508			
Function	LCR Multimeter			
Measuring range	0~10V/500V (DC)	0.2~2kΩ / 2~20kΩ / 20~200kΩ	0~2.5mH/25mH	C1: 0~2.5nF/25nF/250nF/1uF
	0~500V (AC)	200~2MΩ / 2k~20MΩ	250mH/2.5H/25H	5uF/25uF/250uF
		20k~200MΩ / 200k~2000MΩ		C2: 10~4000uF
Accuracy	3.0%	3.0%, 4.0% (200k~2000MΩ)	3.0%	3.0%
Accessories	NA			

Dimensions: 160×105×44 mm

Weight: 400g



MS-508

POWER SUPPLY

TEST INSTRUMENT

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METER

MACHINE

ACCESSORY

JL SERIES ELECTRIC METER

JL SERIES



Feature

Compact size

- .Easy operation and stable work
- .Safety sockets and high reliability
- .Novel design and various types for you



JL-01

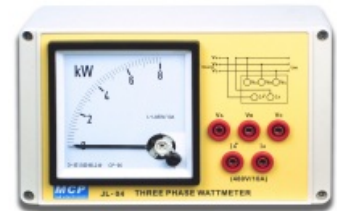


JL-02

Technical data	JL-01	JL-02
Function	Frequency meter	Frequency meter
Type	Analog	Reed
Range	45~55Hz(220V AC)	45~55Hz(220V AC) 55~65Hz(220V AC)
Accuracy	1.0%	1.0%

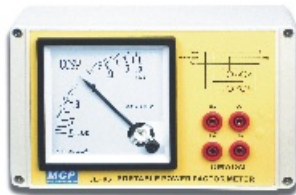


JL-03



JL-04

Technical data	JL-03	JL-04
Function	Wattmeter	Wattmeter
Type	Single phase	Three phase
Range	0~1kW (L-N 220V/5A)	0~4kW (L-L 380V/5A)
Accuracy	1.5%	1.5%



JL-05



JL-08

Technical data	JL-05	JL-08
Function	Power factor meter	Power factor meter
Type	Three phase	Single phase
Range	0.5~1~0.5 (380V/5A)	0.5~1~0.5 (220V/5A)
Accuracy	2.5%	2.5%



JL-06



JL-07

Technical data	JL-06	JL-07
Function	AC ammeter	AC voltmeter
Range	0~5A	0~500V
Accuracy	1.5%	1.5%

MU33B



Features

.3 1/2 digit display

.Temperature measuring

.Various kinds of function: diode test, On/Off buzzer and data hold



MU33B

Technical Data		MU33B
DC voltage	Range	200mV/2000mV/20V 200V/500V
	Accuracy	$\pm(0.5\% + 2)$
AC voltage	Range	200V/500V
	Accuracy	$\pm(1.2\% + 10)$
DC current	Range	200 μ A/200mA/10A
	Accuracy	$\pm(1\% + 2)$
AC current	Range	NA
	Accuracy	NA
Resistance	Range	200 Ω /2000 Ω /20k Ω 200k Ω /20M Ω
	Accuracy	$\pm(0.8\% + 2)$
Temperature	Range	NA
	Accuracy	NA
Battery test	Range	1.5V/9V/12V
	Accuracy	$\pm(2.5\% + 2)$
Diode test		✓
Data hold		✓
Background light		✓
Low battery warning		✓
Input resistance		DCV \geq 10M Ω ACV \geq 5M Ω
Max display		1999
Power supply		9V (6F22) battery
Weight		156g
Dimensions (W×H×D)		130 mm×73.5 mm×35 mm

POWER SUPPLY

TEST INSTRUMENT

EDU. INSTRUMENT

METER

MACHINE

ACCESSORY

PORTABLE DIGITAL MULTIMETER

MU39A



Features

3 1/2 digit display

- .Max. test voltage up to 1000VDC and 750VAC
- .Various kinds of function: auto power off, diode test, triode test, On/Off buzzer and data hold



MU39A

Technical Data		MU39A
DC voltage	Range	200mV/2V/20V/200V/1000V
	Accuracy	±(0.5% +1)
AC voltage	Range	2V/20V/200V/750V
	Accuracy	±(0.8% +3)
DC current	Range	20 μ A/200 μ A/2mA
	Accuracy	±(0.8% +1)
AC current	Range	200 μ A/20mA
	Accuracy	±(1% +3)
Resistance	Range	200 Ω /2k Ω /20k Ω
	Accuracy	±(0.8% +1)
Capacitance	Range	2 μ F
	Accuracy	±(4% +3)
Diode test		✓
On/Off buzzer		✓
Triode test		✓
Auto power off		✓
Data hold		✓
Low battery warning		✓
Input resistance		✓
Max display		1999
Power supply		9V (6F22) battery
Weight		310g
Dimensions (W×H×D)		172 mm×83 mm×38 mm

POWER SUPPLY

TEST INSTRUMENT

EDU. INSTRUMENT

METER

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PORTABLE DIGITAL MULTIMETER

MU58A



Features

.3 1/2 digit display

.Max. test voltage up to 1000VDC and 750VAC

.Various kinds of function: auto power off, diode test, triode test, On/Off buzzer and data hold



MU58A

Technical Data		MU58A
DC voltage	Range	200mV/2V/20V/200V/1000V
	Accuracy	$\pm(0.5\% + 1)$
AC voltage	Range	2V/20V/200V/750V
	Accuracy	$\pm(0.8\% + 3)$
DC current	Range	20 μ A/2mA/20mA/200mA/20A
	Accuracy	$\pm(0.8\% + 1)$
AC current	Range	2mA/200mA/20A
	Accuracy	$\pm(1\% + 3)$
Resistance	Range	200 Ω /2k Ω /20k Ω 2M Ω /20M Ω /200M Ω
	Accuracy	$\pm(0.8\% + 1)$
Capacitance	Range	2nF/200nF/100 μ F
	Accuracy	$\pm(4\% + 3)$
Diode test		✓
On/Off buzzer		✓
Triode test		✓
Full character display		✓
Auto power off		✓
Data hold		✓
Low battery warning		✓
Input terminal prompting		✓
Input resistance		✓
Max display		1999
Power supply		9V (6F22) battery
Weight		350g
Dimensions (W×H×D)		179 mm×88 mm×39 mm

POWER SUPPLY

TEST INSTRUMENT

EDU. INSTRUMENT

METER

MACHINE

ACCESSORY

PORTABLE DIGITAL MULTIMETER

MU61A



Features

- .Max. Display 4000
- .Capacitor and frequency measuring
- .Max. test voltage up to 1000VDC and 750VAC
- .Various kinds of function: auto power off, diode test, triode test, On/Off buzzer, data hold



MU61A

Technical Data		MU61A
DC voltage (Range/Accuracy)		400mV/±(0.8% +3)
		4V/40V/400V/±(0.5% +1)
		1000V/±(1% +3)
AC voltage (Range/Accuracy)		400mV/±(1.2% +5)
		4V/40V/400V/±(1% +3)
		750V/±(1.2% +5)
DC current (Range/Accuracy)		400 μA/4000 μA/±(1% +2)
		40mA/400mA/±(1.2% +3)
		4A/10A/±(1.5% +3)
AC current (Range/Accuracy)		400 μA/4000 μA/±(1.2% +5)
		40mA/400mA/±(1.5% +5)
		4A/10A/±(2% +5)
Resistance (Range/Accuracy)		400 Ω/±(1.2% +2)
		4k Ω/40k Ω/400k Ω/±(1% +2)
		4M Ω/±(1.2% +2)
Capacitance (Range/Accuracy)		40M Ω/±(1.5% +2)
		40nF/±(3% +5)
		400nF/4 μF/40 μF/±(3% +5)
Frequency	Range	10Hz~10MHz
	Accuracy	±(0.1% +4)
Frequency response		45~400Hz
Duty cycle		0.1%~99.9%
Auto/Manual range		✓
Diode test		✓
On/Off buzzer		✓
hEF test		✓
Triode test		✓
Max./Min. value display		✓
Simulation bar		✓
Data hold		✓
Low battery warning		✓
Relatively testing		✓
Input protection		✓
Input resistance		10M Ω
Max. display		4000
Power supply		9V (6F22) battery
Weight		370g
Dimensions (W×H×D)		180 mm×87 mm×47 mm

POWER SUPPLY

TEST INSTRUMENT

EDU. INSTRUMENT

METER

MACHINE

ACCESSORY

DT SERIES



Features

- .Wide measuring range and high resolution
- .Both photoelectric and contact measuring (DT-6236B)
- .Max. value, Min. value and last value memory
- .Low battery indication



DT-6236B



DT-2235B+

Technical Data		DT-6236B	DT-2235B+
Photoelectric rotation speed	Range	2.5~99999RPM (r/min)	NA
	Accuracy	±(0.05% +1)	NA
Contact rotation speed	Range	0.5~19999RPM (r/min)	0.5~19999RPM (r/min)
	Accuracy	±(0.05% +1)	±(0.05% +1)
Contact line speed (metric)	Range	0.05~1999.9m/min (m/min)	0.5~1999.9m/min (m/min)
	Accuracy	±(0.05% +1)	±(0.05% +1)
Resolution		Photoelectric rotation speed: 0.1RPM (2.5~999.9RPM) 1RPM (over 1000RPM) Contact rotation speed: 0.1RPM (0.5~999.9RPM) 1RPM (over 1000RPM) Contact line speed: 0.01m/min (0.05~99.99m/min) 0.1m/min (over 100m/min)	Contact rotation speed: 0.1RPM (2.5~999.9RPM) 1RPM (over 1000RPM) Contact line speed: 0.01m/min (0.05~99.99m/min) 0.1m/min (over 100m/min)
Sampling time		0.5s (over 120RPM)	0.5s (over 120RPM)
Range selection		Auto	Auto
Effective distance		50mm~250mm	NA
Power consumption		Max. 45mA	Max. 45mA
Memory		Max., Min., Last value	Max., Min., Last value
Time base		6MHz Quartz crystal	6MHz Quartz crystal
Battery accuracy of time base		10×10 ⁻⁶ (0°C~50°C)	10×10 ⁻⁶ (0°C~50°C)
Power supply		4×1.5V AA or external 6VDC	4×1.5V AA
Max. display		99999	99999
LCD size		5digits 18mm	5digits 18mm
Back light		Yellow green back light LCD	Yellow green back light LCD
Weight		0.5kg	0.5kg
Dimensions (W×H×D)		160 mm×72 mm×37 mm	190 mm×72 mm×37 mm

POWER SUPPLY

TEST INSTRUMENT

EDU. INSTRUMENT

METER

MACHINE

ACCESSORY

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GM816 DIGITAL ANEMOMETER



GM816

Features

- Both air velocity and air temperature measuring
- Different velocity indicating and temperature indicating

Technical Data		GM816
Air velocity	Range	0~30m/s, 0~90km/h, 0~5860ft/min, 0~55knots, 0~65mph
	Accuracy	±5%
	Resolution	0.2m/s
Air temperature	Range	-10°C~45°C, 14F~113F
	Accuracy	±2%
	Resolution	0.2°C
Wind chill		✓
Beaufort scale indication		✓
°C/F selection		✓
Low battery indication		✓
Auto power off		1 min. without any operation
Backlight		12 sec. active by press any key
Max./Avg./current reading		✓
Power supply		2×1.5V AA
Weight		55g
Dimensions (W×H×D)		60 mm×105 mm×20 mm

GM1357 DIGITAL SOUND LEVEL METER



GM1357

Features

- Both dBA and dBC frequency weighting characteristic

Technical Data		GM1357
Measuring range		30~130dBA; 35~130dBC
Accuracy		±1.5dB
Resolution		0.1dB (5 digits)
Frequency response		31.5Hz~8.5kHz
Measuring level range		30~130, 40~90, 50~100, 60~110, 80~130
Frequency weighting characteristic		A&C
Time weighting		Fast/Slow
Sampling rate		2 times/second
Microphone		1/2 inch polarization capacitance microphone
AC/DC output		✓
Max. reading		✓
Overload indication		Over/Under
Low battery indication		✓
Power supply		4×1.5V AA or 6VDC/100mA adapter
Weight		310g
Dimensions (W×H×D)		70 mm×256 mm×35 mm

BENCHTOP DIGITAL MULTIMETER

MT8045



Features

- . 4 1/2 digits LCD display with back light
- . Multi-function of ACV/DCV, ACA/DCA, R, C, Hz, hFE, diode test and continuity beeper test
- . High resolution of 10 μ V, 10 μ A, 10m Ω , 1pF, 0.1Hz
- . 0.05% DCV accuracy
- . 20 A high current range
- . 1000V high voltage range
- . AC or AC + DC true rms
- . Overload protection



MT8045

MT8145



Features

- . 4 7/8 digits LCD display with back light, dual display
- . Multi-function of ACV/DCV, ACA/DCA, R, Hz, Max/Min/Main, REL, Hold, dBm, diode test and continuity beeper test
- . High resolution of 10 μ V, 10 μ A, 10m Ω , 0.01Hz
- . Manual or auto ranging
- . 0.03% DCV accuracy
- . 1000V high voltage range
- . AC or AC + DC true rms
- . Overload protection
- . RS232 interface



MT8145

Technical Data		MT8045	MT8145
DC voltage	Range	200mV, 2V, 20V, 200V, 1000V	80mV, 800mV, 8V, 80V, 800V, 1000V
	Accuracy	$\pm(0.05\%rdg+3digits)$	$\pm(0.03\%rdg+3digits)$
	Input impedance	10M Ω	1000M Ω (300mV, 3V) 10M Ω (other ranges)
AC voltage (AC or AC+DC true rms)	Range	200mV, 2V, 20V, 200V, 750V	80mV, 800mV, 8V, 80V, 750V
	Accuracy	200mV range 50Hz ~ 50kHz : $\pm(0.8\%rdg+80digits)$	80mV~80V range 20~50Hz: $\pm(0.8\%rdg+50digits)$
		2V ~ 20V range 50Hz ~ 20kHz: $\pm(0.8\%rdg+80digits)$	50Hz~20kHz: $\pm(0.8\%rdg+50digits)$
200V range 50Hz ~ 5kHz: $\pm(0.8\%rdg+80digits)$		20~50kHz: $\pm(1.5\%rdg+50digits)$ (<75% range)	
DC current	Range	200mA, 2A, 20A	80mA, 800mA, 8A, 20A
	Accuracy	200mA range 50Hz ~ 5kHz: $\pm(0.8\%rdg+80digits)$	80mA, 800mA range 50Hz~10kHz: $\pm(0.8\%rdg+20digits)$
		2A~20A range 50Hz ~ 400Hz: $\pm(1.0\%rdg+50digits)$	8A, 10A range 50Hz~500Hz: $\pm(1.0\%rdg+20digits)$
Resistance	Range	200 Ω , 2k Ω , 20k Ω , 200k Ω , 2M Ω , 20M Ω	800 Ω , 8k Ω , 80k Ω , 800k Ω , 8M Ω , 80M Ω
	Accuracy	$\pm(0.1\%rdg+20digits)$ 200 Ω range	$\pm(0.3\%rdg+10digits)$ 800 Ω ~300k Ω range
		$\pm(0.1\%rdg+5digits)$ 2k Ω ~2M Ω range $\pm(0.4\%rdg+5digits)$ 20M Ω range	$\pm(0.3\%rdg+5digits)$ 8k Ω ~8M Ω range $\pm(3.5\%rdg+3digits)$ 80M Ω range
Capacitance	Range	20nF, 2 μ F, 200 μ F	1nF, 10nF, 100nF, 1 μ F, 10 μ F, 100 μ F
	Accuracy	$\pm(3.5\%rdg+20digits)$ 20nF, 2 μ F range	$\pm(5\%rdg+50digits)$ 1nF range
		$\pm(5.0\%rdg+30digits)$ 200 μ F range	$\pm(2.5\%rdg+50digits)$ 10nF~100 μ F range
Frequency	Range	20kHz, 200kHz	999099Hz~1000.0MHz
	Accuracy	$\pm(1.0\%rdg+20digits)$	$\pm(0.05\%rdg+5digits)$
	Display	0 ~ 1000.0	$\pm(0.1\%rdg+5digits)$
hFE (PNP or NPN)	Test condition	Current is approx. 10 μ A, Vce is approx. 3V	
Diode test		Check the forward voltage of diode. Maximum forward voltage 2V, open voltage 2.8V	
Continuity beeper		<5 Ω	
NMRR		>60dB	
CMRR		>120dB	
Power source		110 ~ 127VAC \pm 10%/220 ~ 240VAC \pm 10%, 50Hz \pm 2Hz/60Hz \pm 2Hz	
Dimensions(W \times H \times D)		260mm \times 220mm \times 82mm	
Weight		Approx. 1kg	

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BENCHTOP DIGITAL MULTIMETER

MT3803/3804



Features

- .3 1/2 digit display (MT3804 4 1/2)
- .Capacitor, frequency and temperature measuring
- .Max. test voltage up to 1000V
- .Various kinds of function: auto power off, diode test, triode test, On/Off buzzer and data hold



MT 3804

Technical Data		MT3803	MT3804
DC voltage	Range	200mV/2V/20V/200V/1000V	200mV/2V/20V/200V/1000V
	Accuracy	$\pm(0.5\%+2)$	$\pm(0.1\%+3)$
	Range	2V/20V/200V/1000V	2V/20V/200V/1000V
AC voltage	Accuracy	$\pm(0.8\%+3)$	$\pm(0.5\%+20)$
	Bandwidth	45Hz~400Hz	45Hz~400Hz
	Range	200 μ A/2mA/20mA/200mA/10A	200 μ A/2mA/20mA/200mA/10A
DC current	Accuracy	$\pm(0.8\%+2)$	$\pm(0.5\%+20)$
	Range	2mA/20mA/200mA/10A	2mA/20mA/200mA/10A
	Accuracy	$\pm(1.0\%+3)$	$\pm(0.8\%+40)$
AC current	Bandwidth	45Hz~400Hz	45Hz~400Hz
	Range	200 Ω /2k Ω /20k Ω /200k Ω 2M Ω /20M Ω	200 Ω /2k Ω /20k Ω /200k Ω 2M Ω /20M Ω /200M Ω
	Accuracy	$\pm(0.8\%+3)$	$\pm(0.5\%+10)$
Resistance	Test Current	0.7 μ A~1mA	0.7 μ A~1mA
	Range	20nF/2 μ F/200 μ F	20nF/2 μ F/200 μ F
Capacitor	Accuracy	$\pm(4\%+3)$	$\pm(4\%+10)$
	Range	-40 $^{\circ}$ C~1000 $^{\circ}$ C	-40 $^{\circ}$ C~1000 $^{\circ}$ C
Temperature	Accuracy	$\pm(1.2\%+3)$	$\pm(1.2\%+25)$
	Range	2kHz/200kHz	2kHz/200kHz
Frequency	Accuracy	$\pm(1.5\%+5)$	$\pm(1.2\%+10)$
	Input Sencitivity	40mVrms	40mVrms
Diode test		✓	✓
On/Off buzzer		✓	✓
Triode test		✓	✓
Data hold		✓	✓
Background light		✓	✓
Low battery warning		✓	✓
Max display		1999	19999
Power supply		AC 220V/50Hz or R14 1.5V*6	
Weight		1.5kg	
Dimensions (W×H×D)		240×105×370mm	

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BENCHTOP DIGITAL MULTIMETER

MT 3805



Features

- .5 1/2 digit display
- .USB and RS232 interface
- .Capacitor and frequency measuring
- .Max.test voltage up to 1000VDC and 750VAC
- .Various kinds of function: auto measuring range diode test, triode test, On/Off buzzer and data hold



MT 3805

Technical Data		MT3805
DC voltage	Range	200mV/2V/20V/200V/1000V
	Accuracy	±(0.015%+3)
AC voltage	Range	200mV/2V/20V/200V/750V
	Accuracy	±(0.2%+100)
	Bandwidth	40Hz~100kHz
DC current	Range	2mA/200mA/10A
	Accuracy	±(0.05%+10)
	Range	2mA/200mA/10A
AC current	Accuracy	±(0.3%+100)
	Bandwidth	40Hz~5kHz
	Range	200 Ω /2k Ω /20k Ω /200k Ω /2M Ω /20M Ω
Resistance	Accuracy	±(0.02%+6)
	Range	60nF/600nF/6 μ F/60 μ F/600 μ F/6mF
Capacitor	Accuracy	±(2%+5)
	Range	10Hz~60MHz
	Accuracy	±(0.1%+3)
Frequency	Input range	1Hz~1MHz: 150mV~30Vrms >1MHz~10MHz: 300mV~30Vrms >10MHz~50MHz: 600mV~30Vrms >50MHz: Not Specified
	Diode test	✓
	On/Off buzzer	✓
	Triode test	✓
Data hold	✓	
Ture RMS	✓	
Auto measuring range	✓	
RS232C	✓	
USB	✓	
Full character display	✓	
Sleep mode	✓	
Input resistance	Range 200mV and 2V: over 500M Ω ,other range: 10M Ω	
Max display	199999	
Power supply	AC 220V/50Hz	
Weight	2.9kg	
Dimensions (W×H×D)	240×105×370mm	

POWER SUPPLY

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SCOPE DIGITAL MULTIMETER

SMM81 SERIES



Features

- .Scope and digital multimeter in one unit
- .Compact design for easy carrying and operating



SMM81B

Technical Data	Range	Best accuracy
DC voltage	400mV/4V/40V/400V/1000V	±(0.8%+8)
AC voltage	4V/40V/400V/750V	±(1%+15)
DC current	400 μ A/4mA/40mA/400mA/4A/10A	±(1%+8)
AC current	400 μ A/4mA/40mA/400mA/4A/10A	±(1.5%+8)
Resistance	400 Ω /4k Ω /40k Ω /400k Ω /4M Ω /40M Ω	±(1%+5)
Capacitance	40nF/400nF/4 μ F/40 μ F/100 μ F	±(3%+8)
Frequency	10Hz~10MHz	±(0.1%+3)
Vertical accuracy		±(5%+1)
Input sensitivity	20mV/div~500Vdiv (1-2-5)	✓
Horizontal accuracy		±(0.01%+1)
Timebase range	100ns/div~5s/div (1-2-5)	✓
Bandwidth		8MHz
Display resolution	160×160	✓
Real-time sample rate		40MSa/s
Duty cycle	0.1%~99.9%	✓
Special functions		
Diode		✓
Continuity buzzer		✓
Display	160×160 monochrome	✓
Trigger types	Free run/normal/single shot	✓
Memory	10 screens and setups	✓
Contrast and bridge setup		✓
Input impedance for DC voltage measurement	Around 10M Ω	✓
Sleep mode		✓
Low battery display		✓
Display backlight		✓
USB		✓
DMM Max. display	3999	✓
Power	1.5V battery (R6)×4	
LCD size	60×60mm	
Dimensions(W×H×D)	200×100×48mm	
Weight	0.5kg	
Standard accessories	Test lead, battery, manual, alligator clip, USB interface cable, software, carrying bag (SMM81B), power adaptor (SMM81B)	
Optional accessories	Scope probe, BNC probe	

POWER SUPPLY

TEST INSTRUMENT

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METER

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PORTABLE LCR METER

BR2831/BR2832/BR2833



Features

- .Hand-held and low consumption
- .4 bins comparator
- .Primary and secondary parameters dual display
- .0.1% Max. accuracy, resolution 0.0001
- .Auto power off function

Technical Data

Test parameters	L, C, D, R, Z , Q, θ , ESR		
Test frequencies	100Hz, 120Hz, 1kHz (BR2831) 100Hz, 120Hz, 1kHz, 10kHz (BR2832) 100Hz, 120Hz, 1kHz, 10kHz, 100kHz (BR2833)		
Test level	0.6Vrms		
Max. test accuracy	0.1%		
Output impedance	100 Ω		
Measurement range	L	100 / 120Hz	1 μ H ~ 1000H
		1kHz	0.1 μ H ~ 100H
		10kHz	0.001 μ H ~ 1H
	C	100 / 120Hz	1p ~ 20mF
		1kHz	0.1p ~ 1000 μ F
		10kHz	0.01p ~ 100 μ F
	R, Z	0.0001 Ω ~ 10M Ω	
		D 0.0001 ~ 9.999	
		Q 0.0001 ~ 9.999	
θ -179.9% ~ 179.9%			
ESR	0.0001 Ω ~ 999.9 Ω		
	Display 40000 counts		
Display resolution	0.0001		
Measurement speed	10 times /sec (fast) 5 times/sec (middle) 2 times/sec (slow)		
Eauivalent circuit	Series / parallel		
Ranging mode	Auto / hold		
Range selecting	Auto		
Tolerance mode	1%, 5%, 10%, 20%		
Correction function	Open and short multi-frequency Zeroing		
Measurement terminals	Five terminals/three terminals		
Input protection fuse	0.1A/63V		
Battery model	7.2V Ni-MH 600mAH rechargeable battery		
AC adapter	Input: 230V \pm 10%, 50Hz \pm 5% Output: 12V~15VDC		
Operating current	Max. 28mA		
Auto power off	5min, 15min, 30min, 60min selectable		
Dimensions(W×H×D)	95mm × 200mm × 45mm		
Weight	460g (with battery)		



BR2832

POWER SUPPLY

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TRANSISTOR TESTER

TST294

Features

- .Various semiconductor DC parameters transistor, diode, triac, FET
- .Capacitor withstand voltage
- .Varistor protection voltage
- .Electrical appliance insulation
- .78 & 79 series voltage regulator
- .Neon bulb and lamp starting voltage
- .AC voltage test



TST294

Parameter	Measuring range	Display	Resolution	Operating condition
$V_{(BR)}$ Breakdown voltage	1000V	0~1000	1V	Breakdown current less than 1mA
	200V	0~199.9	0.1V	
$V_{CE(sat)}$ Collector-emitter saturation voltage drop	2A(I_c)			I_c approx.2000mA I_b approx.200mA
	800mA(I_c)	0~6.00	0.01	I_c approx.800mA I_b approx.80mA
	100mA(I_c)			I_c approx.100mA I_b approx.10mA
	10mA(I_c)	I_c approx.10mA I_b approx.1mA		
hFE DC current gain	10mA(I_b)	0~199.9	0.1	I_c approx.10mA
	1mA(I_b)	0~1999	1	I_b approx.1mA
	10uA(I_b)			I_b approx.0.01mA
I_{CEO} Reverse leakage current	2000 μ A	0~1999	1 μ A	Testing voltage approx.27V
78 & 79 voltage regulation	78XX/79XX	0~24.0	0.1V	
Power source	1.5V alkaline battery(AA)x4 or 6VDC/2A power supply			
Dimensions (W×H×D)	150×70×100mm			
Weight	670g			

DET4000 SERIES DIGITAL EARTH TESTER



Features

- .Conductor resistance measurement (DET4300)
- .Soil resistivity measurement (DET4300)
- .LCD background light
- .Data hold
- .Working LED indicator
- .Low battery warning
- .Function symbol display



DET4200



DET4300

Technical Data		DET4200	DET4300
Earth Resistance Test	Range	0~20Ω, 0~200Ω, 0~2000Ω	0.05~2.099Ω, 0.05~20.99Ω 0.3~209.9Ω, 3~2009.9Ω 0.03k~20.99kΩ, 0.03k~209.9kΩ
	Best Accuracy	±(5% Rdg+2digits)	±(3% Rdg+5digits)
Resolution		0.01Ω	
Earth Voltage Test	Range	0~30VAC(50/60Hz)	
	Best Accuracy	±(2% Rdg +5digits)	
Power Source		1.5V alkaline battery(AA)x8	1.5V alkaline battery(AA)x4
Dimensions (W×H×D)		190×75×155mm	
Weight		900g	
Accessories		one set standard earth test leads, one set simple earth test leads, one carry case	

DIT5000 SERIES DIGITAL INSULATION RESISTANCE TESTER



Features

- .Multi Test Voltage
- .Auto range (insulation only)
- .LCD background light
- .Data hold
- .Working LED indicator
- .Low battery warning
- .Function symbol display
- .AC Voltage Test



DIT5104



DIT5105

Technical Data		DIT5104	DIT5105
Test Voltage		250/500/1000/2500V	100/250/500/1000V
Insulation Resistance		0.1MΩ~20GΩ	
Accuracy		±(3% Rdg +5digits)	
Resolution		0.01MΩ	
AC Voltage Test	Range	600VAC	
	Accuracy	±(2% Rdg +5digits)	
Power Source		1.5V alkaline battery(AA)x8	
Dimensions (W×H×D)		190×75×155mm	
Weight		900g	
Accessories		one set standard insulation test leads, one carry case	